

REMARKS:

Applicant has carefully studied the final Examiner's Action and all references cited therein. The amendment appearing above and these explanatory remarks are believed to be fully responsive to the Action. Accordingly, this important patent application is now believed to be in condition for allowance.

Applicant responds to the outstanding Action by centered headings that correspond to the centered headings employed by the Office, to ensure full response on the merits to each finding of the Office.

Claim Objections

Claim 16 stands objected to as being dependent upon rejected base claim 4. Claim 4 has been amended to overcome the Office's 35 U.S.C. § 101 rejection, and as such claim 16 is now believed to be in condition for allowance.

Claim Rejections – 35 U.S.C. § 112

Applicant acknowledges the quotation of 35 U.S.C § 112, second paragraph.

Claims 1-3, 18, 24 and 25 stand rejected under 35 U.S.C § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, the Office states that claim 1 has been amended to delete a formula step for identifying in former step (c) and so indicates identifying without setting forth any metes and bounds of such identifying.

Applicant respectfully disagrees with the rejection of claim 1. 35 U.S.C § 112, second paragraph requires that the claims must set forth the subject matter that an applicant regards as the invention, and that the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant. Applicant believes that claim 1, as previously amended, sets forth the subject matter that applicant regards as the

invention and particularly points out and distinctly defines the metes and bounds of the subject matter seeking protection. More specifically, in paragraph [0013] of the specification, the novelty of the present invention is expressed as:

In contrast to known methods, the present invention seeks to explicitly model patterns, across genes, tissue samples, or time, and to determine the probability that each gene or sample is a member of the set of estimated latent gene or sample classes, respectively.

Additionally, paragraph [0014] of the specification states the claim elements as:

The preferred steps in this method include organizing one or more measurements on each of the cell of tissue samples, or over a series of experimental or observational conditions, in an array; allowing genes to form a first dimension in a multidimensional space; allowing cell or tissue samples to form a second dimension in a multidimensional space; identifying latent classes of genes in the first dimension and latent classes of cell or tissue samples in the second dimension; calculating the likelihood that each gene is a member of each latent class identified for the first dimension and calculating the likelihood that each cell or tissue sample is a member of each latent class identified for the second dimension.

Additionally, paragraph [0041] and [0042] make it clear that the model formula deleted by amendment from claim 1 is of a form known in the field of microarray experimentation for the identification of genes.

As such, the removal of the formula from claim 1 does not render the claim indefinite because claim 1 read in light of the specification, particularly points out and distinctly defines the metes and bounds of the subject matter seeking protection. It is not the normal function of a claim to disclose the invention, but to point out the features of novelty in the invention as disclosed in the specification of the application. As such, when reading claim 1 in light of the supporting specification, one of ordinary skill in the pertinent art would have been able to ascertain with a reasonable degree of precision and particularity the particular area set and out circumscribed by the claims. More specifically, the formula deleted from claim 1 is an exemplary model formula for identifying a latent class. However, it is the identification of a gene or sample as a member of a set of estimated latent gene or sample classes that is the subject

of the invention, regardless of the mathematical model chosen to represent the multivariate structure of the data.

For the reasons cited above, Applicant believes that claim 1, as currently presented, is definite.

Claim 2 stands rejected in that the formula entered into claim 2 is not fully described as to parameters therein, such as "K" etc.

Applicant respectfully traverses the finding of the Office. As such, Applicant believes that the claims presented are definite as viewed from the vantage point of a person of ordinary skill in the art and that the prima facie case of indefiniteness has not been established. While additional specific parameters have not been identified by the Office, the applicant point out that the variable "K" is adequately defined in the claim. In the statement, $k \in \{1, \dots, K\}$ which indexes the directions of the multidimensional space, it is clear from this statement that "K" would be equivalent to the total number of dimensions in the multidimensional space. Paragraph [0018] of the specification makes it clear that the number of dimensions in the multidimensional space depends upon the number of measurements used in the analysis. More particularly, in the particular embodiment of paragraph [0018], if genes form a first dimension in a multidimensional space, cell or tissue samples form a second dimension, and method of expression measurements form a third dimension, there are three dimensions in this particular multidimensional space. As such, "K" is equal to three and "k" indexes the dimensions and can take on the values 1, 2 or 3.

As such, Applicant believes that the meaning of the term "K" used in the claims is apparent from the descriptive portion of the specification with clear disclosure as to its metes and bounds and is dependent upon the number of dimensions in the particular embodiment.

For the reasons cited above, Applicant believes that the 35 U.S.C § 112, second paragraph rejection has been overcome and that the claims are in condition for allowance.

Claim Rejections – 35 U.S.C. § 101

Applicant acknowledges the quotation of 35 U.S.C § 101.

Claims 4-6 stand rejected under 35 U.S.C § 101 as being directed to non-statutory subject matter.

Independent claim 4 has been amended to more clearly describe that which the applicant regards as the invention.

In consideration of the amendment to the claims as presented in response to this Office Action, applicant believes that the 35 U.S.C § 101 rejections have been overcome and that claims 4-6 are now in condition for allowance.

Claim Rejections – 35 U.S.C. § 102

Applicant acknowledges the quotation of 35 U.S.C § 102(b).

Claims 23 stands rejected under 35 U.S.C § 102(a) and (e)(2) as being anticipated by Cabib et al. (U.S. Patent No. 5,784,162).

Claim 23 has been cancelled.

Claims 11-15 and 17 have been allowed.

If the Office is not fully persuaded as to the merits of Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (727) 507-8558 is requested.

Very respectfully,

SMITH & HOPEN



Dated: November 9, 2005

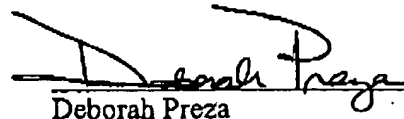
By: _____
Molly L. Sauter
15950 Bay Vista Drive, Suite 220
Clearwater, FL 33760
(727) 507-8558
Attorney for Applicant

CERTIFICATE OF FACSIMILE TRANSMISSION

(37 C.F.R. 1.8(a))

I HEREBY CERTIFY that this Amendment B is being transmitted by facsimile to the United States Patent and Trademark Office, Art Unit 1631, Attn.: Ardin H. Marschel, (571) 273-8300 on November 9, 2005.

Dated: November 9, 2005



Deborah Preza